

WEST MICHIGAN
TRANSPORTATION
OPERATIONS CENTER

www.Michigan.gov/WMTOC

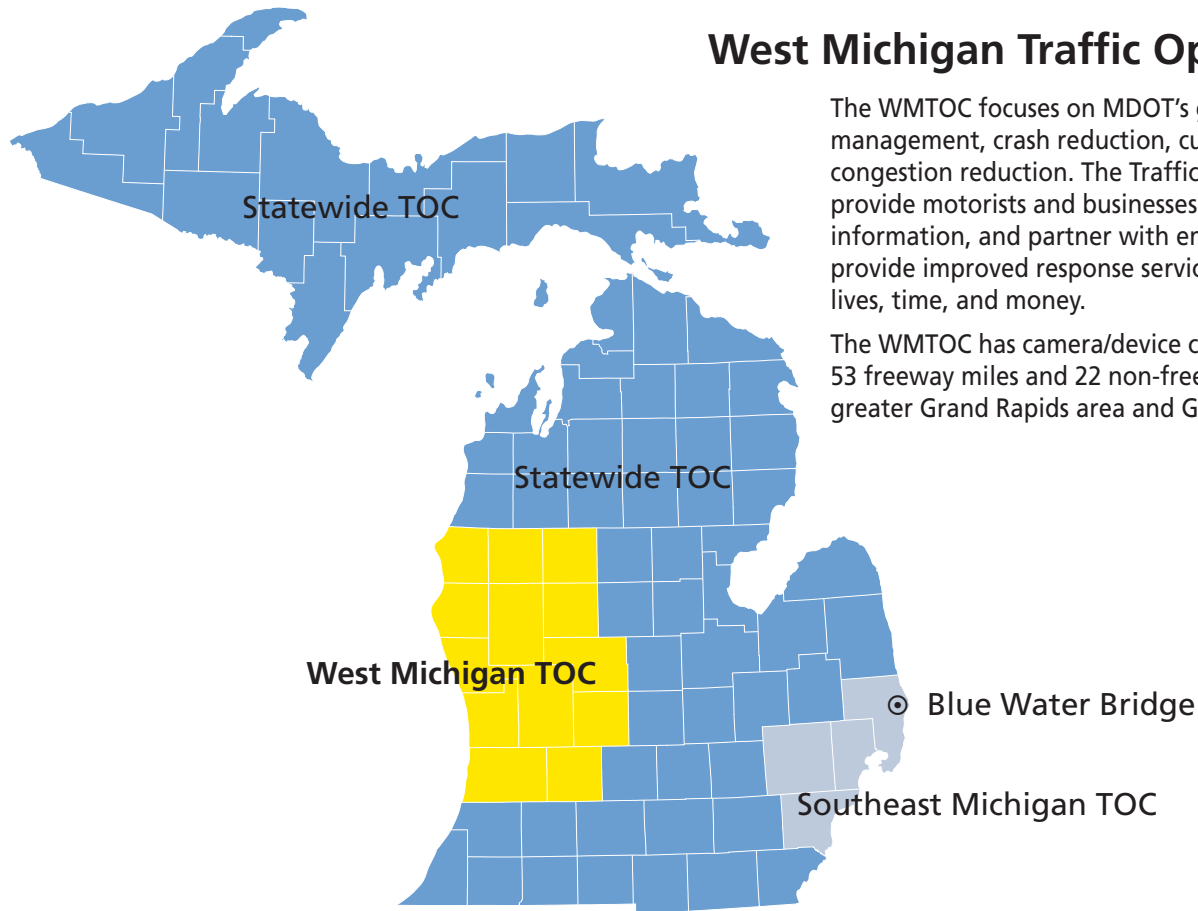
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Monthly Performance Measures

January 2019

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West Michigan Traffic Operations Center

The WMTOC focuses on MDOT's goals of incident management, crash reduction, customer information, and congestion reduction. The Traffic Operations Centers (TOC) provide motorists and businesses with real-time traffic information, and partner with emergency response agencies to provide improved response services to traffic crashes – saving lives, time, and money.

The WMTOC has camera/device coverage on approximately 53 freeway miles and 22 non-freeway trunkline miles in the greater Grand Rapids area and Grand Haven.

Spotlight Events

On Tuesday, Jan. 29, the West Michigan Transportation Operations Center (WMTOC) logged 44 crashes between 6 a.m. and 8 p.m. Roads were icy and snow-covered and snow continuing to fall throughout the day. The air temperatures were single digits, making salt less effective in melting ice off the pavement. One of the most impactful crashes was on eastbound I-96 at 16th Avenue. The multiple-vehicle crash caused the Ottawa County Sheriff Department and MDOT to close I-96 at 16th Avenue. The freeway was closed for about five hours while crews worked to remove all of the vehicles and also spread sand with salt to improve road conditions before reopening to traffic. Control room operators (CRO) displayed messages for the closure on dynamic message signs, posted the information on the Mi Drive statewide website, and sent out e-mail and Twitter notifications to motorists and stakeholders. The WMTOC seeks to provide up-to-date information to motorists and stakeholders to help them make informed decisions about their routes.



January brought some truly inclement winter driving conditions to west Michigan. The WMTOC strives to inform stakeholders about weather conditions as they are occurring as well as pre-emptively. CROs monitor weather forecasts and alerts from the National Weather Service to determine the best time to display messages for each given event. Starting this winter weather season, the WMTOC received approval to display two-phase messages for weather advisories that include a safety message after the alert. During the winter driving season, it is important for all motorists to adjust their driving habits to ensure safe travel for all on the roads. The WMTOC continues to advocate for safe travels and the goal of Toward Zero Deaths on Michigan roadways.

Events by Type

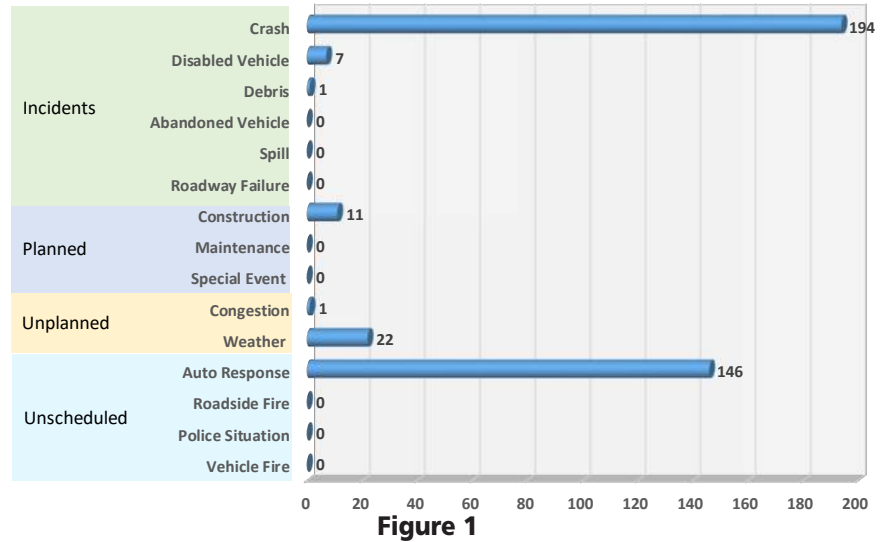
Figure 1 shows events by type.

Event: An occurrence within the transportation operations center (TOC) coverage area that requires action or tracking.

Unplanned Events: An incident or other uncontrollable event that directly affects a Michigan Department of Transportation (MDOT) roadway. Unplanned events include Incidents (crashes, disabled vehicles and debris in the roadway) and other events (weather, congestion, and unclassified).

Planned Events: Events that are scheduled. These include construction, maintenance, and special events.

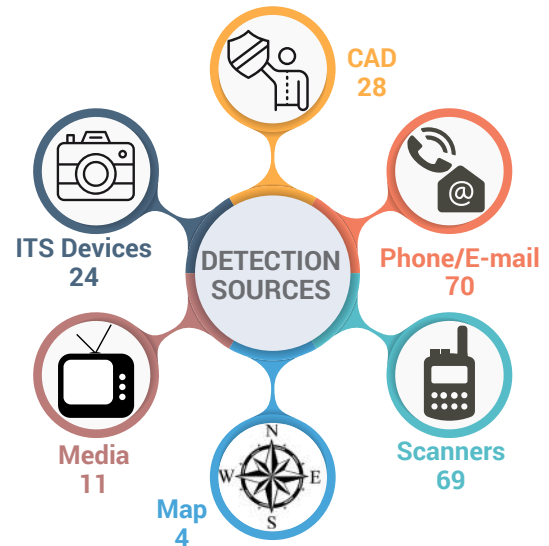
Of the **383** total events this month, **202 (53 percent)** were classified as **Incidents**.



Incidents by Detection Source

Figure 2 provides information on detection sources.

Control room operators (CRO) rely on various sources to detect incidents that occur along the freeways. Noting the source ensures that the incident was detected by a reliable source and provides insight on which sources provide the most information.



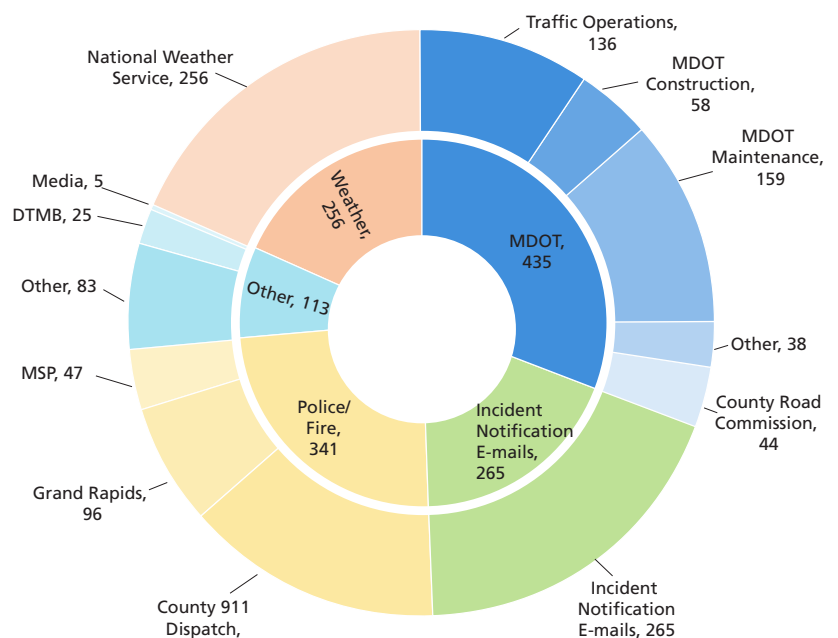
Communication

Figure 3 shows communications displayed by type that are managed by CROs.

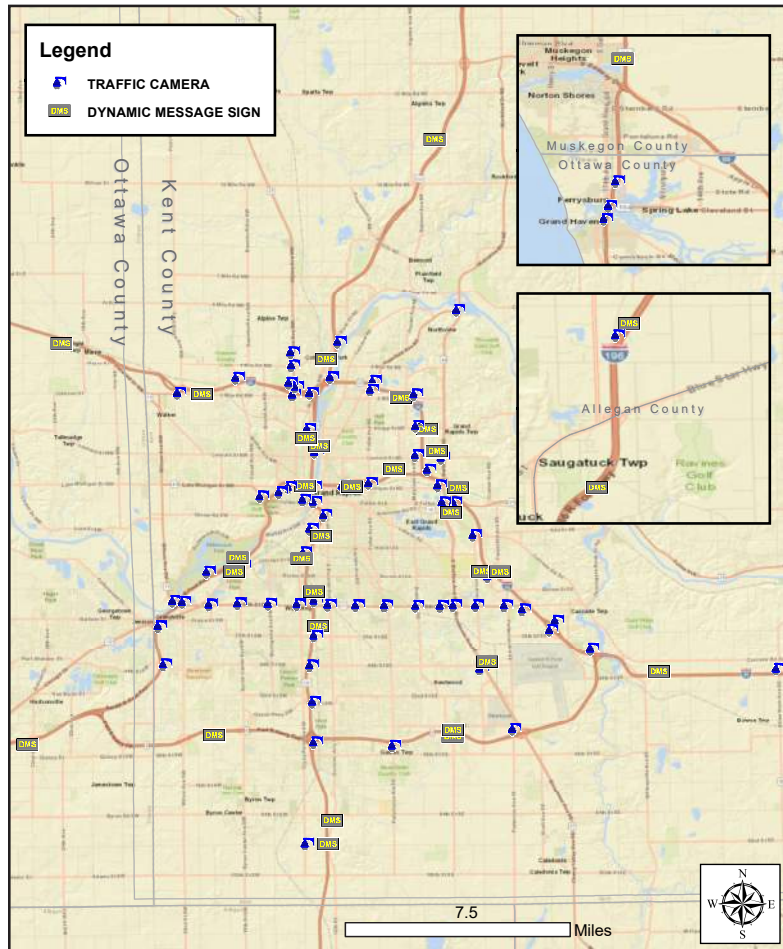
WMTOC tracks all incoming and outgoing communications to the control room. This includes phone calls, e-mails sent and received, and notifications sent to stakeholders.

CROs managed **1,410** communications this month. Of those communications, **733 (52 percent)** were e-mails, including notifications, and **677 (48 percent)** were phone calls.

The largest number of communications is with MDOT staff, which includes traffic operations, construction, maintenance, county road commission personnel, and other MDOT personnel.



Device Locations



DMS Messages by Type

There were **290** "unique messages" displayed throughout the intelligent transportation systems network this month, as shown in **Figure 4**.

"Unique messages" include incidents, special events, congestion, weather, construction, or AMBER alerts.

Travel time messages are routinely displayed when unique messages are not active. Travel times are updated every three minutes.

Unique Messages



Figure 4

Field Device Availability

The WMTOC tracks the availability of all system devices so that timely maintenance can occur. Reliability of the devices ensures that the operators have tools available to accurately provide traffic conditions to the motoring public. **Table 1** shows field device availability for this month.

Device Type	Number of Devices	Percent Available
Cameras	71	80%
DMS	33	92%
Microwave vehicle detection system	132	78%

Table 1

Winter Weather Advisory Activities

The WMTOC tracked all incidents of winter weather advisory events that occurred in each of the Grand Region counties. **Table 2** shows the summary of winter weather advisory incidents. **Figure 5** shows the total number of incidents and weather advisory days by county.

Winter Weather Advisories Events	January 2019	December 2018
The number of incidents that have occurred during winter weather advisories	63	2
The percentage of total incidents for the month	34%	2%

Table 2

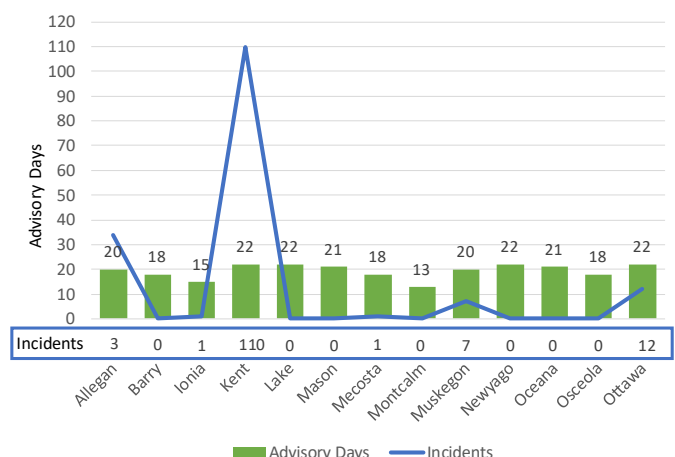


Figure 5

Incidents on Key Routes

Table 3 indicates that **US-131** had the highest total number of incidents and the highest per mile rate in January. **M-11** had the longest incident duration for the month. The table shows incidents for high-volume roadways in the Grand Region.

Route	Miles	January 2019			January 2018			Previous 12-month Avg.		
		Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration
I-96, US-31 to M-50	52	48	0.9	1:10	20	0.4	3:14	30.8	0.6	0:58
I-196, Blue Star Hwy to I-96	40	41	1.0	1:05	19	0.5	1:28	26.8	0.7	1:08
US-131, 84th St to Rockford Rest Area	24.5	87	3.6	1:09	60	2.4	2:41	56.6	2.3	0:53
US-31, I-96 to M-120	8	10	1.3	1:20	10	1.3	3:40	5.8	0.7	1:43
M-6, I-196 to I-96	19	8	0.4	1:14	2	0.1	0:54	2.2	0.1	1:14
M-11, I-196 to I-96	11.5	1	0.1	2:38	2	0.2	0:42	1.3	0.1	1:44
M-37/M-44, M-6 to West River Dr	15.5	147	9.5	0:00	196	12.6	0:00	42.8	2.8	0:36

Table 3

Table Key Increase No Change Decrease

Data is compared to the same month of the previous year.

Total Unplanned Incidents

There were **202** total unplanned incidents this month; **87 percent** of these were high-impact incidents. A high-impact incident is one that results in a total freeway closure, a ramp closure, or a lane closure.

Incident information is shown in **Figure 6**.

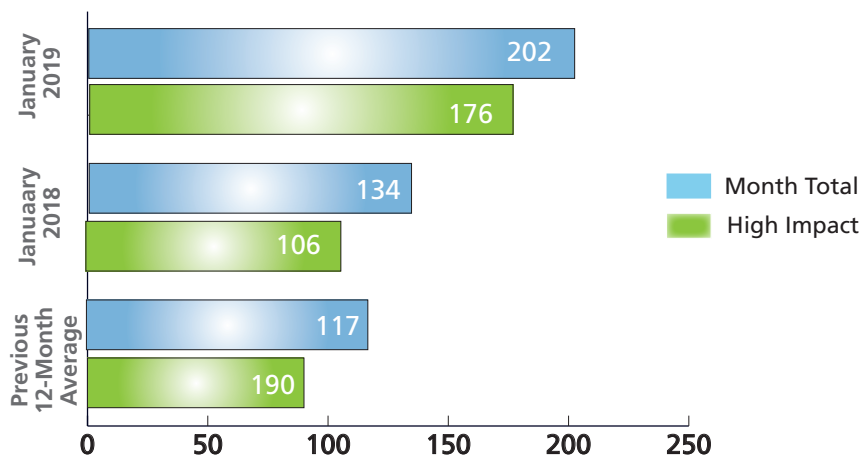


Figure 6

High-Impact Incidents

Thirty percent of high-impact incidents this month occurred along **US-131**. For most high-impact incidents, CROs provide e-mail notifications to stakeholders in the affected area. The notification includes the location of the incident, the degree of closure, the reason for the closure, and any other pertinent information related to traffic operations. See **Table 4**.

Closure Type	January 2018	January 2017	Previous 12 - Month Avg
Freeway Closure	47	9	10.0
Lane Closure	129	97	79.8
Ramp Closure	0	0	0.0
Total	176	106	89.8

Table 4

Work Zone-Related Events

There were **0 incidents** identified by operators as being related to work zones during this month.

Top Duration Incidents

The longest-duration incident this month occurred on **northbound and southbound M-120 at 60 Street**, which lasted **6 hours, 27 minutes**. The average incident duration for January was **70 minutes**. See **Table 5**.

Location	Date	Duration	Details
NB and SB M-120 at 60 Street	Jan. 29	6:27	Multi-Vehicle Crash
NB US-131 at 142 Avenue	Jan. 29	5:57	Tractor-Trailer Crash
EB I-96 at 16 Avenue	Jan. 29	5:18	Multi-Vehicle Crash
EB I-96 at 112 Avenue (B31)	Jan. 29	4:46	Multi-Vehicle Crash
NB US-131 after 124 Avenue	Jan. 29	4:38	Tractor-Trailer Crash

Table 5

Total Incidents per Weekday Hour

The WMTOC operates 24 hours per day, 7 days per week. The WMTOC is staffed locally during peak traffic hours, typically 6 a.m. to 8 p.m. Operations are transferred to the Statewide Transportation Operations Center during off-peak hours.

During the month of January, **7 a.m.** had the largest hourly number of incidents. Historically, **8 a.m.** has the greatest number of incidents in the Grand Region. **Figure 7** shows **incidents** for weekdays for this month.

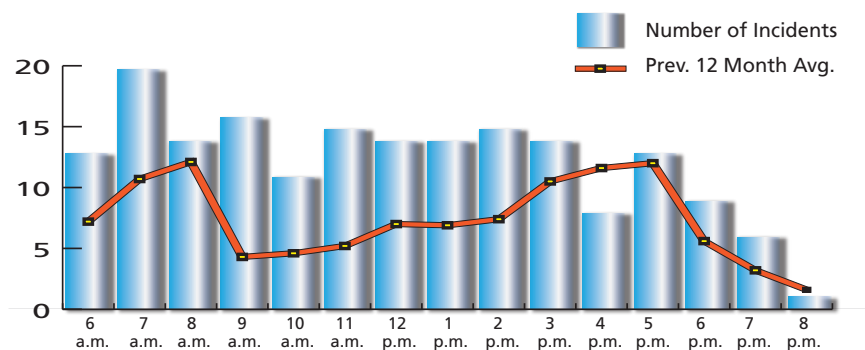


Figure 7

Incident and Roadway Clearance Times

MDOT shares a goal with local first responders to clear incidents from the roadway as quickly as possible. Reducing overall incident clearance times limits the risk to travelers and responders on scene. Effective response and clearance improves safety for motorists as well as first responders. MDOT's goal is to minimize delays caused by incidents as well as the occurrences of secondary incidents.

Roadway clearance time: The time between the awareness of an incident and confirmation that all lanes are open to traffic.

Incident clearance time: The time between the awareness of an incident and when all involved vehicles are removed from the scene.

Figure 8 shows a breakdown of the number of incidents in each time to clear bracket. **Figure 9** illustrates the average roadway and incident clearance times for the month.

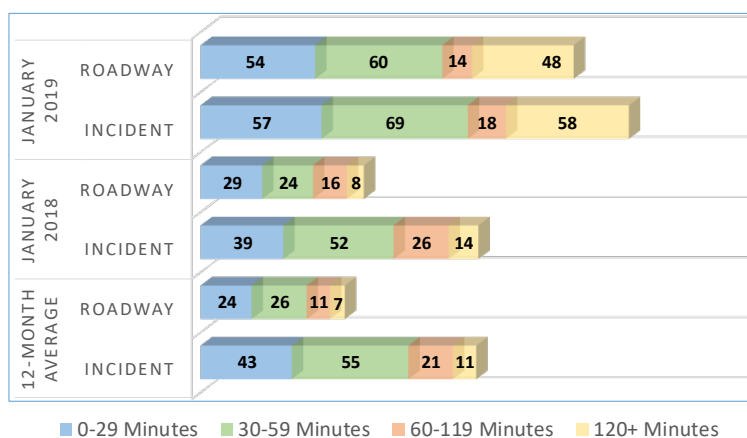


Figure 8

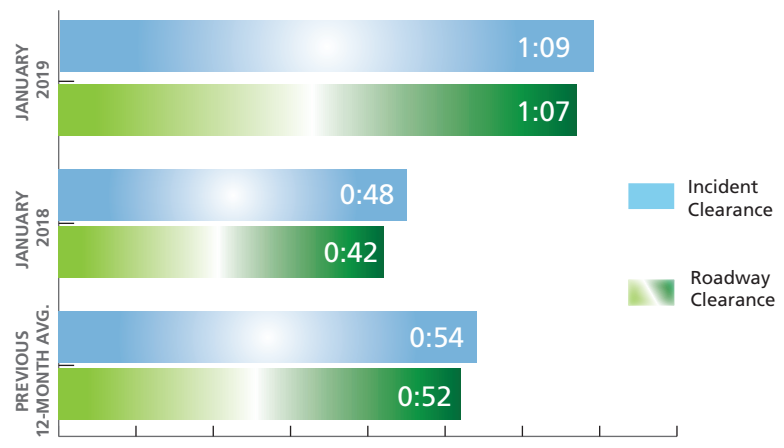


Figure 9

Secondary Crashes

Out of the **178** total crashes this month, **4 percent** were **Secondary Crashes** as observed by WMTOC CROs.

Crash Hot Spot and Most Used DMS Activity

Figure 10 shows areas where the greatest number of crashes occurred in the reported month. The shading starts with green for fewer crashes, then transitions to yellow for a moderate number of crashes, and finally to red for the highest number of crashes based on the total crashes that occurred. The top five most used DMS are also depicted on the map. The direct correlation can be seen between the areas of most crashes to DMS utilization.

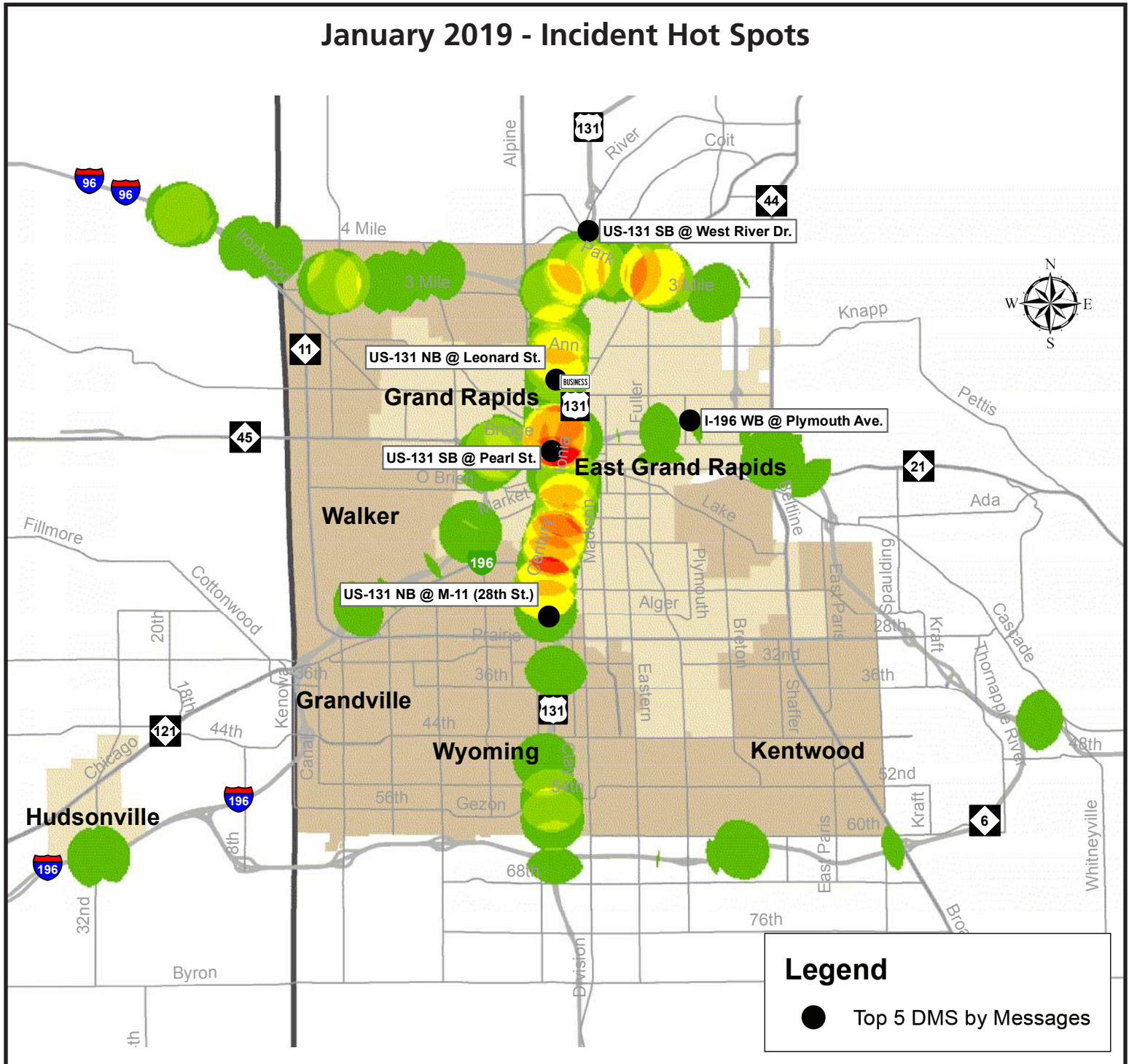


Figure 10